International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 9 Issue 5, Sep-Oct 2025 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

A Quasi-Experimental Study to Assess the Knowledge and Effectiveness of Bed Exercises on Level of Pain, Early Ambulation Among Abdominal Surgery Patients at Selected Hospital of Dehradun, Uttarakhand

Shivani Kumayan[1], Dr. Rosaline Lily Mary[2]

[1]Student, [2]Professor,
[1,2]SGRRIM & HS College of Nursing, Dehradun, Uttarakhand, India

ABSTRACT

Postoperative Pain and delayed ambulation are a prevalent and distressing challenges experienced by the patients undergoing abdominal surgery which can lead to prolonged hospital stays . Bed exercises are simple and cost-effective intervention to reduce the level of pain and promote the early ambulation after abdominal surgery. Aim: To assess the knowledge regarding bed exercise and to evaluate the effectiveness of bed exercise on the level of pain and early ambulation among abdominal surgery patients admitted in Shri Mahant Indresh Hospital, Dehradun. Methodology: RESEARCH DESIGN AND METHODS: A quasi-experimental study was conducted among 60 abdominal surgery patients in Shri Mahant Indresh hospital, Dehradun with 30 patients in the experimental group and 30 in the control group. A structured knowledge questionnaire, visual analogue pain scale and a early ambulation Likert 5 point scale were used to assess knowledge and outcomes related to pain and ambulation. The experimental group received a structured bed exercise intervention postoperatively, while the control group received routine care. Data were analyzed using ANNOVA, descriptive and inferential statistics. Results: The findings of the study revealed a significant reduction in the mean level of pain and improvement in ambulation in the experimental group following the administration of structured bed exercises. In the experimental group, the pre-test pain score (Day 0, before intervention) was 6 ± 2.66, which progressively decreased with each post-operative assessment. On Post-test I (Day 3), the score reduced to 4.63 ± 2.68, further declined to 3.26 ± 2.76 on Post-test II (Day 6), and reached 1.83 ± 2.50 by Post-test III (Day 9). The consistent decrease in pain levels was statistically significant. In contrast, the control group, which received only routine care, showed minimal changes. The pre-test score was 6.06?±1.01, and post-intervention scores showed only slight variations: 5.83 ± 1.26 on Post-test I, 5.73 ± 1.28 on Post-test II, and 5.66±?1.93 on Post-test III, with no significant difference ($p > 0.05$). Similarly, the mean level of early ambulation in the experimental group showed significant improvement over time. On Day 0 (pre-test), the ambulation score was 19.3 ± 7.06, which increased to 23.8 ± 7.23 on Day 3, 30.9 ± 8.62 on Day 6, and peaked at 36.2 ± 9.25 on Day 9, demonstrating a statistically significant improvement in early mobilization after bed exercise intervention. However, in the control group, the ambulation score showed only mild improvement from 19.96 ± 6.50 (pre-test) to 21.73 ± 6.81 on Post-test I, 23.33 ± 6.21 on Post-test II, and 25.23 ± 6.36 on Post-test III, which was not statistically significant ($p > 0.05$). Conclusion: Bed exercises are effective in reducing postoperative pain and promoting early ambulation in abdominal surgery patients. Incorporating structured bed exercises into postoperative care protocols can enhance recovery and improve patient outcomes.

KEYWORDS: *Bed exercise, postoperative pain, early ambulation, abdominal surgery.*

How to cite this paper: Shivani Kumayan | Dr. Rosaline Lily Mary "A Quasi-Experimental Study to Assess the Knowledge and Effectiveness of Bed Exercises on Level of Pain, Early Ambulation Among Abdominal Surgery Patients at Selected Hospital of Dehradun, Uttarakhand" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-9 | Issue-5, October 2025, pp.522-530, URL: www.ijtsrd.com/papers/ijtsrd97525.pdf

IJTSRD97525

Copyright © 2025 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (http://creativecommons.org/licenses/by/4.0)

INTRODUCTION

American Medical Association (2023)- Surgery is part of the profession of medicine and is done to change the structure of the human body by cutting or destroying tissues. The diagnostic or therapeutic treatment of illnesses or disease processes through the use of devices such as lasers, ultrasounds, ionizing radiation, scalpels, probes, and needles that cause localized change or transposition of live human tissue is also known as surgery. Using mechanical, thermal, light-based, electromagnetic, or chemical methods, the tissue can be sliced, burned, evaporated, frozen, sutured, probed, or manipulated by closed reductions for significant dislocations or fractures. Surgery also includes injecting diagnostic or therapeutic materials into the body's cavities, internal organs, joints, sensory organs, and central nervous system (although this excludes nursing staff administering subcutaneous, intramuscular, and intravenous injections upon a doctor's order). All of these surgical procedures, including laser-assisted ones, are intrusive, and substituting a light knife or laser for a metal knife or scalpel does not remove the hazards associated with any surgical treatment.

World Health Organization- Surgery are crucial components of a people-centered continuum of emergency, critical, and operative care (ECO) services as well as a comprehensive primary health care (PHC) strategy.

STATEMENT OF THE PROBLEM

"A Quasi-experimental study to assess the knowledge and effectiveness of bed exercises on level of pain, early ambulation among abdominal surgery patients at selected hospital of Dehradun, Uttarakhand.

OBJECTIVES

1. To assess the existing knowledge regarding bed exercises among abdominal surgery patients.
2. To evaluate the effectiveness of bed exercise on level of pain and early ambulation among abdominal surgery patient in experimental group.
3. To compare the level of pain, early ambulation in experimental group and control group.
4. To find out the association between pre test levels of knowledge, level of pain, early ambulation among patients with selected demographic variables.

RESEARCH HYPOTHEISIS

H 1= There will be significant difference in the mean level of pain and early ambulation among abdominal surgery patients after bed exercises in experimental group.

H2 = There will be significant difference between in the mean level of pain and early ambulation of the subject in experimental group who receive bed exercise then control group

H3= There will be significant association between pre test level of knowledge, level of pain pain, early ambulation among patients with selected demographic variables

OPERATIONAL DEFINITION

- ASSESS**:-** It refers to the impact of bed exercises on the level of pain and early mobility shown by the postoperative patients undergoing abdominal surgery.
- KNOWLEDGE: It refers to the awareness and understanding of bed exercises on level of pain and early ambulation.
- EFFECTIVENESS: It refers to the extent to which bed exercises have impact on level of pain and early ambulation shown by the patients undergoing abdominal surgery.
- BED EXCERCISES: It refers to a series of exercise Dorsiflexion and plantar flexion, frontal raise, lateral raise, turning on bed ,elbow flexion that can be done in bed to help in early mobilization and to maintain muscle strengthen.
- PAIN- It refers to the unpleasant expressed response that patients perceives due to tissue trauma after 12 hours of surgery, near the surgical site, measured by visual analogue pain rating scale.
- EARLY AMBULATION-It refers to a technique of postoperative care in which a patient gets out of bed and engages in light activity (such as sitting, standing or walking) as soon as possible after an operation.
- ABDOMINAL SURGERY- It refers to Any surgical operation done on the organs or tissues inside the abdominal cavity. There are different type of abdominal surgeries one of them is Laprotomy In order to reach the abdominal cavity, a Laprotomy is a surgical technique that entails cutting a wide incision through the abdominal wall. It is frequently carried out for therapeutic or diagnostic reasons.

ASSUMPTION

- The sample might not be having an adequate knowledge about bed exercises on level of pain and early ambulation after abdominal surgery
- After abdominal surgery lack of physical activities might cause complications.
- Physical activity such as bed exercise might reduce the level of pain and improve early ambulation

DELIMITATION

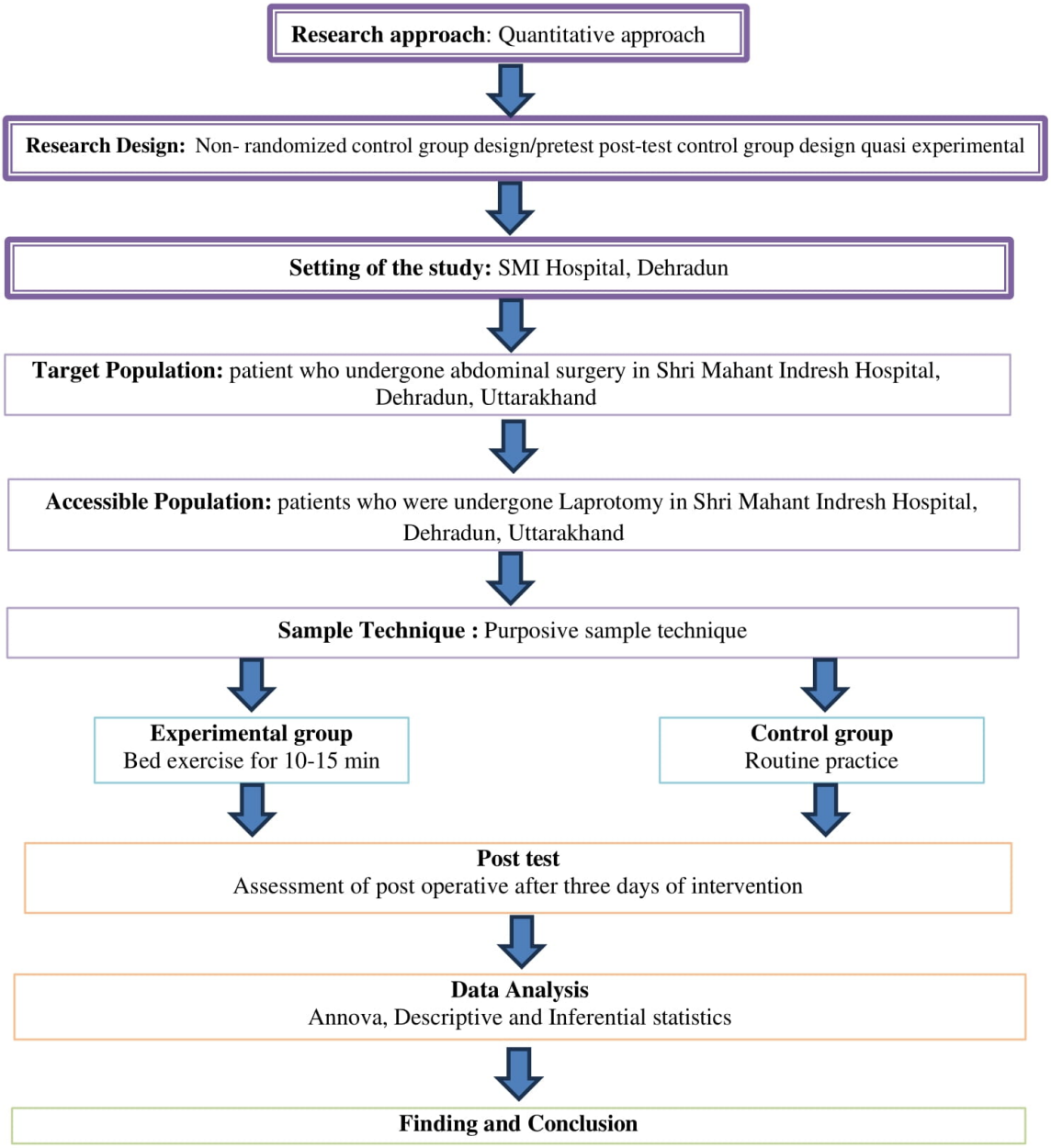
- The study is limited to abdominal surgery patients.
- The study is limited to patients admitted in the abdominal ward in Indresh Hospital Dehradun.
- Study is limited to patients who are conscious with stable vital signs.

RESEARCH APPROACH (Quantitative research approach)

The quantitative research approach is an organized, unbiased method of investigating variables by collecting and analyzing numerical data. It uses statistical tools to measure patterns, test predictions, and generate objective knowledge. Therefore, in the view of nature of problems and accomplishes the objectives of the study a quantitative approach was considered appropriate for the present study.

RESEARCH DESIGN

Research design is a blueprint for conducting the study that maximizes control over factors that could interfere with validity of the findings, the research design of the study is Quasi experimental design pretest posttest with control group:


Research approach: Quantitative approach
Research Design: Non- randomized control group design/pretest post-test control group design quasi experimental
Setting of the study: SMI Hospital, Dehradun
Target Population: patient who undergone abdominal surgery in Shri Mahant Indresh Hospital, Dehradun, Uttarakhand
Accessible Population: patients who were undergone Laprotomy in Shri Mahant Indresh Hospital, Dehradun, Uttarakhand
Sample Technique : Purposive sample technique
Experimental group
Bed exercise for 10-15 min
Control group
Routine practice
Post test
Assessment of post operative after three days of intervention
Data Analysis
Annova, Descriptive and Inferential statistics
Finding and Conclusion

VARIABLES-

Variables are anything that has a quantity and quality that varies. In the present research study research variable are bed exercises, level of pain and early ambulation. The personal variables selected for the study are Age, gender, occupation, education, income, personal habits, diet, body weight, allergy, previous history of surgery.

1. **Dependent Variables**- The dependent variable in this study is level of pain and early ambulation.
2. **Independent Variable**- The independent variable within the study is bed exercises administered to postoperative patients who undergoing abdominal surgery.
3. **Sociodemographic variable**-. In this study, sociodemographic variable are age, gender, Residence, Occupation, Personal habits, Diet, Body weight, any co morbidities, Previous history of surgery, previous knowledge of bed exercises.

Setting of the Study

The study was conducted in Shri Mahant Indresh Hospital, Dehradun. The hospital is a multi-specialty hospital and research centre with bed strength of 1500 which caters multi lingual patients from various parts of Uttarakhand. The study is conducted in surgical ward. Ward is divided into 4 parts. Surgery I, II (male and female surgical ward) surgery III, and IV. Bed strength of female surgical ward is 20 and male surgical ward bed strength is 20 and the other surgery III and IV bed strength 40. Total bed strength of surgery ward is 80. The selection of area was done on the basis of geographical proximity, feasibility of conducting study and availability of sample.

Population Of The Study

A population is a collection of all people or things based on some shared traits. Patients undergoing abdominal surgery made up the study's population.

Target Population

It refers to the population that the researcher wishes to make it generalization. In this research the target population is the patients with Abdominal surgery.

Accessible population

It refers to the total number of cases that meet the predetermined standards. Patients undergoing Laprotomy at Indresh Hospital in Dehradun is the study's accessible population.

Sample Size

The sample sizes for the present study is 60 patients with abdominal surgery at Mahant Indresh Hospital, Dehradun, Uttarakhand. Samples are those who fulfilled the inclusion criteria. The samples are equally distributed among experimental and control group (30 in each group)

SAMPLING TECHNIQUE:

The sampling technique used in this study is purposive sampling technique

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria:

- Postoperative patients who has undergone abdominal surgery
- Patients who are on first operative day with stable vital signs.
- Patients who are willing to participate
- The study is limited to laparotomy patients only without complications.

Exclusion Criteria:

- Patients with complications such as any medical co-morbidity.
- Patients who all are highly dependent on analgesics

DESCRIPTION OF THE TOOL

S. NO	DESCRIPTION OF TOOL	DATA COLLECTION METHOD
Sociodemographic data	Contains of 11 items Age, Gender, Residence, Occupation, Personal habits, Diet, Body weight, any co morbidities, Previous history of surgery, knowledge regarding bed exercises.	Asking questions
Knowledge questionnaire	Total of 25 questions	Structured questionnaire
Visual Analogue Pain Scale	Standardized measurement tool that helps assess subjective characteristics or attitudes that are difficult to quantify directly	Observation Method
Early Ambulation	Consists of 10 points related to mobility.	Likert method

CONTENT VALIDITY

The content validity of tool is obtained from medical experts. The content validity of tool is given to experts along with objectives.

They are 4 experts from field of nursing, 1 experts from surgery and 1 from physiotherapy. The experts were permitted to give their opinions and suggestions regarding 'adequacy' and 'appropriateness' of the study. After obtaining suggestions from the experts, necessary modifications are made in the tool.

RELIABLITY OF THE TOOL

Reliablity is the degree of consistency and accuracy of an instrument which measure the attribute for which it is designed to measure. The reliability of the tool is established by using the data collected from the abdominal surgery patients who are admitted at Shri Mahant indresh Hospital at Dehradun. The reliability of knowledge questionnaire and Pain tool is established by test-retest method by using Karl's Pearson correlation coefficient the obtained reliability of r=0.9 indicated that knowledge questionnaire and r=0.98 Pain tool was found **highly reliable**.

The reliability of Ambulation tool is established by by using Cronbach's alpha. The obtained reliability r=.96 indicated ambulation tool was **highly reliable.**

ETHICAL CONSIDERATION-

Prior to conduction of study permission was obtained from the relevant authorities at Shri Mahant Indresh Hospital, as well as from the study participants. Additionally, approval was granted by the Human Ethics committee of SGRR College of Nursing to proceed with the study.

Section A: Distribution of frequency and percentage of selected Socio-demographic variable of the subjects with abdominal surgery.

Table 4.1: Frequency and Percentage distribution of the subject with abdominal surgery patients according to socio demographic variable (N=60)

S. NO	Demographic Variable	Frequency (F)	Percentage (%)
1	**Age in Years**		
	25-35 years	10	16.7%
	36-45 years	20	33.3%
	46-55 years	12	20.0%
	56 years and above	18	30.0%
2	**GENDER**		
	Male	32	53.3%
	Female	28	46.7%
3	**Residence**		
	Urban	40	66.7%
	Rural	20	33.3%
4	**Occupation**		
	Employed	38	63.3%
	Unemployed	22	36.7%
5	**Personal habits**		
	Smoking	12	20.0%
	Tobacco chewing	10	16.7%
	Consumption of alcohol	8	13.3%
	No substances use	30	50.0%
6	**Diet**		
	Vegetarian	35	58.3%
	Non-Vegetarian	25	41.7%
7	**Body Weight**		
	Below50 50-70	18	30.0%
		28	46.7%
	Above70	14	23.3%
8	**Any medical co-morbidity**		
	Yes	22	36.7%

	No	38	63.3%
9	**Any previous history of surgery** Yes No	 25 35	 41.7% 58.3%
10	**Any previous knowledge of bed exercise** Yes No	 18 42	 30% 70%

Frequency and percentage of level of Pain among the subjects with abdominal surgery in both experimental and control group in pre and post test

In experimental group N=30

Level of Pain	Pre test Score (0 day)		Post test score I (3rd day)		Post test score II (6th day)		Post test score III (9th day)	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
No pain (0)	0	0%	0	0%	6	20%	15	50%
Mild pain (1-3)	10	33.3%	12	40%	13	43.3%	9	30%
Moderate pain (4-6)	7	23.3%	11	36.7%	7	23.3%	4	13.3%
Extreme pain (7-9)	11	36.7%	6	20%	3	10%	2	6.7%
Worst possible pain (10)	2	6.7%	1	3.3%	1	3.3%	0	0%

Table 4.5: Frequency and percentage distribution of the sample according to the Early ambulation among abdominal surgery patients in both experimental and control group in Pre and post test

In experimental group N=30

Ambulation Ability	Pre test Score (0day)		Post test score I (3rd day)		Post test score II (6th day)		Post test score III (9th day)	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
Severely impaired ambulation (10-20))	18	60%	16	53.3%	6	20%	3	10%
Moderately impaired ambulation (21-30)	12	40%	10	33.3%	9	30%	6	20%
Mildly impaired ambulation (31-40)	0	0%	4	13.4%	8	26.7%	9	30%
Independent ambulation (41-50)	0	0%	0	0%	7	23.3%	12	40%

Comparison of level of pain and early ambulation of the subject in both experimental and control group

Table 4.8: To Analysis the difference of pain level in experimental and control group group Comparison within Experimental group Comparison within Control group

Experimental group Duration	Mean ± SD	F-value	P- Value	Control Group Duration	Mean ±SD	F-value	P-Value
Pre test	6±2.66	***13.62**	*0.000000113	**Pre test**	6.06 ±1.01	**#0.443**	>0.05
Post test I	4.63±2.68			**Post test I**	5.83 ±1.26		
Post test II	3.26±2.76			**Post test II**	5.73 ±1.38		
Post test III	1.83±2.50			**Post test III**	5.66 ±1.93		

Key - *Significant #Insignificant

The findings of the study is discussed below:

Age- Distribution of abdominal surgery patients on the basis of their age group shows that most of respondents were in the age group of 36-45 years, 30% of respondents were in the age group of 56 and above year , 20% of respondents were in the age group of 46-55 year and 16.7% were in the age of 25-35 years.

Gender- on the basis of their gender depicts the majority 53.3% of respondents were found males and 46.7% were found to be females in the study group.

Residence- Distribution of respondents on the basis of the area shows that 66.7% were from urban areas and 33,3% were from rural areas.

Occupation- Regarding occupation revered that 63.3% were employed and 36.7% were unemployed.

Personal habits- On the basis of their personal habits 50% did not use any substance, 20% had habit of smoking, 16.7% had habit of chewing tobacco and 13.3% had habit of alcohol consumption.

Diet: According to diet 58.3% were vegetarian and 41.7% were non vegetarian.

Body weight: Distribution of respondents on the basis of their weight 46.7% were between 50-70 kg, 30% were 50kg and below and 23.3% were above 70 kg.

Any medical co-morbidity: Regarding to any medical co-morbidity 63.3% have no medical co-morbidity and 36.7% have some medical co-morbidity.

Any previous history of surgery: On the basis of previous history of surgery 58.3% have no previous history of surgery and 41.7% have previous history of surgery.

Previous knowledge of bed exercises: Regarding previous knowledge of bed exercise revered that 70% were having no knowledge and 30% have some knowledge of bed exercise.

1. **To assess the existing knowledge regarding bed exercises among abdominal surgery patients at selected hospital of dehradun.**

The present study confirms that the overall level of knowledge in pre test 70% were having no knowledge. This shows that there is lack of knowledge regarding bed exercises. Although few patients i.e 30% have some knowledge of bed exercise majority have lack of knowledge.

The results were supported by the following studies:

Abhijeet Singh Rathore, et.al. (2024)- Conducted an experimental study to assess the effectiveness of self instruction module on knowledge regarding post operative management among relatives of patient undergoing abdominal surgeries at selected hospital at Kota Rajasthan.60 samples were selected using Non probability purposive sampling technique. The findings revealed that in pretest, the majority of the respondent 76.67 % had poor level of knowledge, 23.33% had average level of knowledge and none of respondents had good level of knowledge.

Cheekavolu et al. (2017)- Conducted a pre-experimental study conducted in kerala, india involving 40 abdominal surgery patients, 100% had inadequate knowledge of postoperative exercises in the pre-test. After a video-assisted teaching program, 97.5% demonstrated adequate knowledge and only 2.5% had moderate knowledge in the post-test .

2. **To evaluate the effectiveness of bed exercise on level of pain and early ambulation among abdominal surgery patient in experimental group.**

Present study confirms that there was considerable improvement in level of pain and early ambulation after the intervention of bed exercises. The overall mean level of pain using visual analogue scale started at 6.13 on day 0 and decreased to 1.22 by day 9 with p value of less than 0.05 same as the mean level of early ambulation using ambulation ability test

20.10 on day 0 increased to 29.03 on day 9 with a p value of 0.05. Each session of exercise programme was for 10-15 minutes. This indicates that bed exercise leads to reduction in level of pain and improvement in early ambulation with p value of <0.05.

The result were supported by the following studies:

Zuleyha Simsek Yaban et.al (2023)- Conducted an experimental study on effect of bed exercises on following major abdominal surgery on early ambulation, mobilization, pain and anxiety. Using a randomized-controlled trial design, this study was conducted in the general surgery clinic of a research and teaching hospital. The trial had 120 patients, 60 of whom were in the experimental group and 60 of whom were in the control group, all of whom were scheduled for major abdominal surgery. Patients in the experimental group underwent bed exercises on the day of the procedure after completing pretests measuring postoperative pain and anxiety. On the first and second postoperative days, the workouts persisted. The control group did not receive any intervention. There were statistically significant drops in the parameters taken following the bed exercises that the patients in the experimental group completed.

Hanan El-Sayed Mohamed El-Sayed (2020)- Conducted an Experimental study on Effect of Early Progressive Bed Exercise and Movement on Recovery after Caesarean Section. The average scores of post-operative pain were significantly reduced postintervention (8.48± 1.05, 7.52 ± 1.54) at (P=0.001). Also, there were a significant difference between both groups regard to the duration of catheterization after caesarean section (15.94 ± 3.825, 13.68 ± 4.088), selfvoid after removal of catheter (2.16 ± 0.997, 1.32±0.653), initiation of breast-feeding and holding baby (11.50 ± 3.57, 6.48 ±0.735), oral hydration (8.24±2.825, 6.24±0.657) and first flatus passed after cesarean section (12.28±5.338, 6.60±7.910) in favor of the intervention group (P<0.001).

3. To compare the level of pain, early ambulation in experimental group and control group.

The present study confirms that the result of experimental group is showing significant differences at p value on the other hand result of control group is showing insignificant differences at p value. As comparing the mean difference of level of pain using visual analogue scale and early ambulation using ambulation ability test using likert scale (level of pain p= <0.05, level of early ambulation p= <0.05) in experimental group whereas in control group level of pain and early ambulation p=>0.05. This indicates that mean difference in control group is lesser than experimental group.

The result were supported by following studies:

Versha negi et.al.(2023)- Conducted an experimental study on Early Verse Conventional Ambulation on Postoperative Pain among Women with Lower Segment Cesarean Section. Convienent sampling strategy was used to recruit 60 people in the quasi-experimental study design. After 10 hours of surgery and over the first three postoperative days, the experimental group's level of pain was measured following breathing exercises, hand and leg movements, an upright sitting position, and standing and walking with and without assistance. There was a significant difference ($P < 0.001$) between the mean postoperative pain scores after early ambulation among experimental on day 1st, day 2nd, and day 3rd. There was a significant decline in pain scores in experimental group compared to control group ($P < 0.001$) with days progresses.

Charushila Vilas Jadhav, Amarja Gosavi (2023)- Conducted an experimental study on Effect of Early Ambulation and Progressive Exercise on Post-cesarean Section Recovery among Women at Selected Hospitals of the City. The study samples comprised 110 post- cesarean mothers divided into 55 in the experimental and 55 in control group using non-probability purposive sampling technique. The analysis fndings depict that the corresponding $P < 0.05$. After intervention of early ambulation and progressive exercise given to mothers in the experimental group, it depicted that majority of the samples 41 (74.55%) had excellent outcome, 14 (25.45%) had good outcome, whereas in control group, 36 (65.45%) had good outcome, and 19 (34.54%) had poor outcome.

4. To find out the association between Pre test level of knowledge, level of pain, early ambulation among patients with selected demographic variables.

There is significant association between the demographic variable Residence, gender, any previous history of surgery and any previous knowledge of surgery and not-significant with age, gender, occupation, personal habits, diet, body weight and any medical co-morbidity with knowledge.

There is a significant association between demographic variables age, medical co- morbidity, history of surgery and previous knowledge of bed exercise and there is no signficant association between other demographic variable i.e body weight, gender, resisdence , occupation and personal habits.

There is significant association between residence, diet, occupation, personal habits, body weight, medical co-morbidity, previous history of surgery and previous knowledge of bed exercises and non-significant association between gender and age only with early ambulation.

The result were supported by following studies:

Zhiying Wu et.al. (2025)- Conducted a study on influencing factors of early ambulation on gastrointestinal neoplasm patients. A mixed-methods study involving 405 patients identified age, education level, exercise habits, nutritional status, pulmonary disease status, activity awareness, and social support as statistically significant influencers of early ambulation (all $p < .05$). This highlights how demographics and clinical status affect postoperative mobilization.

Takuya Yanagisawa (2024)- Conducted a study on the association between objectively measured preoperative light-intensity physical activity and postoperative ambulation in patients with gastrointestinal cancer. In a study of 42 GI cancer surgery patients, preoperative light-intensity physical activity—measured via accelerometer—was significantly associated with fewer days to first postoperative ambulation, even after adjusting for age, functional fitness, and depression. Notably, moderate-to-vigorous activity and sedentary time were not predictive.

Testing of the Hypothesis

H1- There will be significant difference in the mean level of pain and early ambulation among abdominal surgery patients after bed exercises in experimental group.

The hypothesis H1 stated in this study is accepted since there was significant difference found in mean level of pain and early ambulation among abdominal surgery after bed exercise in experimental group. Hence the stated hypotheses **H1** is accepted as there was a significant improvement in level of pain and early ambulation after administartion of bed exercise.

H2 = There will be significant difference between in the mean level of pain and early ambulation among

abdominal surgery after intervention in control group and experimental group.

The hypothesis H2 stated in this study is accepted since there was significant difference found in mean level of pain and early ambulation among abdominal surgery after bed exercise in experimental group with significant p value of<0.05 and insignificant p value <0.05 in control group. Hence the stated hypotheses **H2** is accepted as there was a significant improvement in level of pain and early ambulation after administration of bed exercise in experimental group compared to control group who received routine care.

H3= There will be significant association between pretest level of knowledge, level of pain, early ambulation among patients with selected demographic variables.

The hypothesis H3 stated in this study is accepted since there was significant associaion found in mean level of knowledge, pain and early ambulation among abdominal surgery after bed exercise in experimental group with significant p value of<0.05. Hence the stated hypotheses **H3** is accepted as there was a significant association between pre test level of knowledge, pain, early ambulation among patients with selected demographic variable

CONCLUSION

The major finding in this study is the poor level of knowledge, increase level of pain and lesser ambulation after abdominal surgery. There are many pharmacological and non pharmacological measures are adopted to treat the level of pain and early ambulation but the data from the various study revealed that there is no relief from the level of pain and delayed ambulation. Regular bed exercise after abdominal surgery can reduce the level of pain and increase ambulation among patient undergoing abdominal surgery.

The present study has implications for nursing practice, nursing education, nursing administration and nursing research

LIMITATIONS

- In this study bed exercises were limited only for the level of pain and early ambulation,
- Limited only for 60 samples.
- Time period was only one month.
- Limited to only for abdominal surgery patients of SMI hospital Dehradun.

References

[1] Policy Finder | AMA [Internet]. Ama-assn.org. 2020. Available from: https://policysearch.amaassn.org/policyfinder/detail/surgery?uri=%2FAMADoc%2FHOD.xml-0-4317.xml

[2] Surgical care [Internet]. www.who.int. Available from: https://www.who.int/teams/integrated-health-services/clinical-services-and-systems/surgical-care

[3] Lewis, S.L., Bucher, L., Heitkemper, M.M., & Harding, M. (2022). Medical-Surgical Nursing: Assessment and Management of Clinical Problems (11th ed.). Elsevier.

[4] Abdominal surgery - Knowledge and References | Taylor & Francis [Internet]. Taylor & Francis. 2021 [cited 2025 Aug 12]. Available from: https://taylorandfrancis.com/knowledge/Medicine_and_healthcare/Surgery/Abdominal_surgery/.

[5] Definition of SURGERY [Internet]. Merriam-webster.com. 2019. Available from: https://www.merriam-webster.com/dictionary/surgery.

[6] Wikipedia Contributors. Surgery [Internet]. Wikipedia. Wikimedia Foundation; 2019. Available from: https://en.wikipedia.org/wiki/Surgery.

[7] Markéta Dušková et al [Internet]. Available from: https://www.lf3.cuni.cz/3LFSVI-61-version1-introduction_surgery.pdf.

[8] Wikipedia Contributors. Abdominal surgery [Internet]. Wikipedia. Wikimedia Foundation; 2024. Available from: https://en.wikipedia.org/wiki/Abdominal_surgery

[9] Far North Surgery [Internet]. Farnorthsurgery.com. 2024. Available from: https://www.farnorthsurgery.com/blog/abdominal-surgery-types-benefits-and-risk- factors

[10] Simsek Yaban Z, Bulbuloglu S, Kapikiran G, Gunes H, Kula Sahin S, Saritas S. The effect of bed exercises following major abdominal surgery on early ambulation, mobilization, pain and anxiety: A randomized-controlled trial. International Wound Journal. 2024 Feb;21(2) Available from: https://pubmed.ncbi.nlm.nih.gov/37828715/